



US006099329A

United States Patent [19][11] **Patent Number:** **6,099,329****Goff et al.**[45] **Date of Patent:** **Aug. 8, 2000**[54] **RETRACTABLE COAXIAL JACK**[75] Inventors: **Darrell E. Goff**, Layton; **Stephen C. Aldous**, Salt Lake City, both of Utah[73] Assignee: **3Com Corporation**, Santa Clara, Calif.[21] Appl. No.: **09/183,835**[22] Filed: **Oct. 30, 1998**

5,474,470	12/1995	Hammond, Jr.	439/675
5,499,923	3/1996	Archibald	439/26
5,505,633	4/1996	Broadbent	439/329
5,538,442	7/1996	Okada	439/676
5,561,727	10/1996	Akita et al.	385/88
5,608,607	3/1997	Dittmer	361/686
5,634,802	6/1997	Kerklaan	439/131
5,660,568	8/1997	Moshayedi	439/654
5,679,013	10/1997	Matsunaga	439/144
5,773,332	6/1998	Glad	439/344
5,928,009	6/1999	Lee	439/131

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/976,819, Nov. 24, 1997, abandoned, which is a continuation-in-part of application No. 08/689,715, Aug. 16, 1996, Pat. No. 5,727,972, which is a continuation of application No. 08/291,277, Aug. 16, 1994, Pat. No. 5,547,401, which is a continuation-in-part of application No. 08/040,656, Mar. 31, 1993, Pat. No. 5,338,210, which is a continuation-in-part of application No. 07/974,253, Nov. 10, 1992, abandoned, which is a division of application No. 07/866,670, Apr. 8, 1992, Pat. No. 5,183,404.

[51] **Int. Cl.⁷** **H01R 13/44**[52] **U.S. Cl.** **439/131; 439/316**[58] **Field of Search** 439/131, 638,
439/945, 946, 578, 675, 312, 314, 316,
320, 322, 323[56] **References Cited****U.S. PATENT DOCUMENTS**

363,568	5/1887	Wightman	439/675
879,773	2/1908	Horton	439/255
1,504,843	8/1924	Shore	439/255
2,877,437	3/1959	Flanagan, Jr. .	
3,173,473	3/1965	Loveland	439/253
4,138,182	2/1979	Muratsuka	439/322
4,836,801	6/1989	Ramirez	439/322
5,139,439	8/1992	Shie	439/359
5,183,404	2/1993	Aldous et al.	439/131
5,411,405	5/1995	McDaniels	439/131
5,439,394	8/1995	Ikeda	439/675
5,463,261	10/1995	Skarada et al.	439/131

FOREIGN PATENT DOCUMENTS

WO 95/13633 5/1995 WIPO .

Primary Examiner—Neil Abrams*Attorney, Agent, or Firm*—Workman, Nydegger & Seeley[57] **ABSTRACT**

A retractable coaxial jack (14) includes a base (52) slidably positioned within a PC card (12) or other electrical apparatus. Projecting from the front face (89) of the base (52) is a tubular insulator (90) that encircles a conductive socket (92). The socket (92) bounds an opening (94) for receiving a contact pin (20). Also projecting from the front face (89) of the base (52) on opposing sides of the tubular insulator (90) is a conductive, outwardly extending first arm (95) and a conductive, outwardly extending second arm (96). The separate outwardly extending arms (95, 96) are desirably arranged to create a thinner coaxial jack (14) than conventional types of coaxial jacks to enable the jack to be retracted into the PC card (12). Preferably each of the retention arms (95, 96) has a curved inside face (98), an opposing curved outside face (100) and a knob (102) projecting from the outside face. The outwardly extending arms (95, 96) are desirably spaced from the tubular insulator (90) to form a gap (104). The tubular insulator (90), conductive socket (92) and outwardly extending arms (95, 96) are configured to selectively couple with a conventional coaxial connector such as a bayonet connector or BNC.

22 Claims, 6 Drawing Sheets